

AMENDMENTS

In the Claims:

This listing of claims replaces all prior versions and listing of claims in the application:

- 1-15. (Cancelled).
16. (Currently Amended) An anode of an electrochemical cell, wherein said anode comprises:
- (a) a substrate; and
 - (b) an anode active layer comprising the reaction product of lithium metal co-deposited in-situ on the substrate with one or more gaseous materials; and,
 - ~~(b) a substrate;~~
- ~~wherein the electrochemical cell comprises a cathode active material that includes one or more of the group consisting of: electroactive metal chalcogenides, electroactive conductive polymers, and electroactive sulfur containing materials.~~
17. (Currently Amended) The anode of claim 16, wherein ~~said~~ the one or more gaseous materials are selected from the group consisting of carbon dioxide, acetylene, nitrogen, ethylene, sulfur dioxide, and hydrocarbons.
18. (Currently Amended) The anode of claim 16, wherein ~~said~~ the gaseous material is carbon dioxide.
19. (Currently Amended) The anode of claim 16, wherein ~~said~~ the substrate is selected from the group consisting of metal foils, polymer films, metallized polymer films, electrically conductive polymer films, polymer films having an electrically conductive coating, electrically conductive polymer films having an electrically conductive metal coating, and polymer films having conductive particles dispersed therein.
20. (Currently Amended) The anode of claim 16, wherein ~~said~~ the anode further comprises a multi-layered structure in contact with a surface of the anode active layer, on the side opposite to the substrate.

21. (Currently amended) An anode of an electrochemical cell, wherein the anode comprises:
- (a) a substrate; and
 - (b) an anode active layer comprising lithium metal and the a reaction product of lithium with one or more gaseous materials; and a substrate.
22. (Cancelled).
23. (Currently Amended) The anode of claim ~~22~~ 21 wherein the one or more gaseous materials are selected from ~~one or more of~~ the group consisting of carbon dioxide, acetylene, nitrogen, ethylene, sulfur dioxide, hydrocarbons, alkyl sulfites esters, alkyl sulfates esters, and alkyl phosphates esters.
24. (Previously Presented) The anode of claim 21, wherein the substrate is selected from the group consisting of metal foils, polymer films, metallized polymer films, electrically conductive polymer films, polymer films having an electrically conductive coating, electrically conductive polymer films having an electrically conductive metal coating, and polymer films having conductive particles dispersed therein.
25. (Currently Amended) An electrochemical cell comprising:
- (a) a cathode comprising ~~an electroactive sulfur-containing material~~ a cathode active material;
 - (b) an anode, wherein the anode comprises a substrate and an anode active layer comprising lithium metal and ~~lithium oxide~~ a reaction product of lithium with one or more gaseous materials; and
 - (c) a non-aqueous electrolyte interposed between the anode and the cathode;
- ~~wherein the anode comprises an anode active layer comprising lithium metal and lithium oxide.~~
26. (Currently Amended) The cell of claim 25 wherein the ~~lithium oxide~~ reaction product is formed by co-deposition in-situ of lithium with one or more gaseous materials on the substrate.

27. (Currently Amended) The cell of claim ~~26~~ 25, wherein the one or more gaseous materials are selected from one or more of the group consisting of carbon dioxide, acetylene, nitrogen, ethylene, sulfur dioxide, and hydrocarbons.
28. (Currently Amended) The cell of claim ~~26~~ 25, wherein ~~said~~ the gaseous material is carbon dioxide.
29. (Currently Amended) The cell of claim 25 wherein the cathode active material ~~electroactive sulfur-containing material~~ comprises sulfur ~~in an elemental form~~.
30. (Previously Presented) A method of making an anode of an electrochemical cell in a vacuum chamber wherein the method comprises:
- (a) providing a moving substrate;
 - (b) moving the substrate consecutively past a lithium vapor deposition source, wherein the source is characterized by a nozzle through which lithium vapor is emitted;
 - (c) providing reactive gaseous material adjacent to the lithium deposition nozzle; and
 - (d) condensing the lithium vapor of (b) on the substrate in presence of gaseous material to co-deposit a lithium anode active layer to form the anode.
31. (Previously Presented) The method of claim 30, wherein the lithium vapor is condensed on the substrate by contacting the substrate with a cooled surface as the substrate passes through the vapor.
32. (Currently Amended) The method of claim 30, wherein the thickness of the co-deposited lithium layer of the anode is from ~~1 μ m to 50 μ m~~ 2 μ m to 100 μ m.
33. (Currently Amended) The method of claim 30, wherein the thickness of the co-deposited lithium layer of the anode is from ~~1 μ m to 15 μ m~~ 5 μ m to 50 μ m.
34. (Previously Presented) The method of claim 30, wherein the substrate is selected from the group consisting of metal foils, polymer films, and metallized polymer films.

35. (Previously Presented) The method of claim 34, wherein the polymer film is selected from the group consisting of films of polyethylene terephthalate, polyethylene naphthalate, 1,4-cyclohexanedimethylene terephthalate, polyethylene isophthalate, and polybutylene terephthalate.
36. (Previously Presented) An electrochemical cell comprising the anode of claim 16, a cathode including the cathode active material, and an electrolyte disposed between the anode and cathode.
37. (Previously Presented) A battery comprising one or more of the electrochemical cells of claim 36.
38. (New) The anode of claim 16, wherein the anode active layer comprises a reaction product of lithium and the one or more gaseous materials.
39. (New) The anode of claim 16, wherein the thickness of the anode active layer of the anode is from 2 μm to 100 μm .
40. (New) The anode of claim 20, wherein the multi-layered structure comprises layers selected from the group consisting of single ion conducting layer and polymer layer.
41. (New) The anode of claim 21, wherein the reaction product is dispersed within the anode active layer.
42. (New) The anode of claim 21, wherein the gaseous material is carbon dioxide.
43. (New) The anode of claim 21, wherein the thickness of the anode active layer of the anode is from 2 μm to 100 μm .
44. (New) The anode of claim 21, wherein the anode further comprises a multi-layered structure in contact with a surface of the anode active layer, on the side opposite to the substrate.
45. (New) The cell of claim 25, wherein the reaction product is dispersed within the anode active layer.
46. (New) The cell of claim 25, wherein the reaction product is lithium oxide.

47. (New) An cell of claim 25, wherein the cathode active material includes one or more of the group consisting of electroactive metal chalcogenides, electroactive conductive polymers, and electroactive sulfur-containing materials.
48. (New) The cell of claim 25 wherein the one or more gaseous materials are selected from the group consisting of carbon dioxide, acetylene, nitrogen, ethylene, sulfur dioxide, hydrocarbons, alkyl sulfites esters, alkyl sulfates esters, and alkyl phosphates esters.
49. (New) The cell of claim 25, wherein the gaseous material is carbon dioxide.
50. (New) The cell of claim 25, wherein the cell is a primary cell.
51. (New) The cell of claim 25, wherein the cell is a secondary cell.
52. (New) The anode of claim 25, wherein the thickness of the anode active layer of the anode is from 2 μm to 100 μm .
53. (New) The method of claim 30, wherein the gaseous material is selected from one or more of the group consisting of carbon dioxide, acetylene, nitrogen, ethylene, sulfur dioxide, hydrocarbons, alkyl phosphate esters, alkyl sulfite esters, and alkyl sulfate esters.
54. (New) The method of claim 30, wherein the gaseous material is carbon dioxide.